A Cross-Sectional Study of Input-Output Performance of Health Facilities Under LaQshya: Evidence from Western Gujarat, India

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Abstract:

Introduction: The Government of India has implemented LaQshya initiative to improve quality of intrapartum and postpartum care in public health facilities through structured quality improvement initiatives. Yet, empirical evidence on how preparedness at facility level affects outcomes in maternal service delivery is lacking in majority of districts in Gujarat. **Objective:** To measure the association between input preparedness and output performance indicators of the labour rooms in public health facilities implementing LaQshya in Rajkot district, Gujarat. **Methods:** A cross-sectional study (March–June 2022) in eight LaQshya-notified government facilities of Rajkot assessed input readiness using a checklist adapted from LaQshya standards. Domains included infrastructure, equipment, drugs, and human resources, summarized as composite input scores. Output measures covered deliveries, caesarean rates, PPH, breastfeeding initiation, patient satisfaction, and referral delays. Descriptive analysis and Spearman's rank correlation examined associations between facility readiness and maternal health service outcomes. **Results:** Composite input scores in facilities ranged from 56.2% to 89.5%. There were statistically significant positive correlations between input scores and early initiation of breastfeeding ($\rho = 0.72$, $p = 0.043$) and delivery volume ($\rho = 0.61$, $p = 0.05$). Facilities with higher input scores consistently performed better in critical maternal health outcomes. Facilities with low input scores had evidence of delays in the referral process, low patient satisfaction rates, and gaps in availability of supplies. **Conclusion:** Facilities with stronger LaQshya input showed better maternal outcomes, especially breastfeeding and delivery volume. Strengthening inputs in facilities with poor score may reduce maternal morbidity and improve patient satisfaction significantly.

Keywords: Breast Feeding, Maternal Health Services, Health Facilities, Quality of Health Care

Introduction:

India has made optimistic strides towards maternal health metrics over the past 20 years. A significant 40% rise in institutional deliveries has largely been achieved through a steady transition from home births to facility-based delivery services. Whereas the institutional delivery increases from 38.7% in the National Family Health Survey-3 (2005-06) to 94.3% in NFHS-5 (2019-20), largely as a result of government programs aimed at addressing economic barriers to access institutional deliveries for poor women, like Janani Suraksha Yojana (JSY) and Janani Shishu Suraksha Karyakram (JSSK).[1] Despite the advancements in quantitative measurements of maternal health, qualitative differences in that care

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remain, especially around intrapartum care and immediate postpartum care.

A substantial amount of the maternal and neonatal mortality takes place within the critical window of labor and the first 24 hours post-delivery. Estimates show that about 46% of maternal deaths, 40% of stillbirths, and 40% of neonatal deaths occur on the day of delivery.[2] There is a need to improve the quality of care around labor and delivery and not just the coverage of facility delivery. The factors identified include a lack of preparedness by the facility, delays in providing the timely intervention, lack of skilled persons available and a lack of respectful maternity care.[3]

To address these gaps, India's Health and Family Welfare (MoHFW), Government of India initiated a LaQshya – Labour Room Quality Improvement Initiative in 2017[4]; with the aim of overall reduction of preventable maternal and neonatal mortality and morbidity by enabling and provisioning to provide respectful, safe and quality intrapartum care across public health facilities. LaQshya is specific to labour rooms and maternity OTs of medical colleges, district hospitals, sub-district hospitals; and community health centres (CHCs) with high delivery load; and focuses on interventions related to infrastructure standing, availability of skilled human resources, live monitoring of data; and standardization of quality standards and protocols.[5]

The LaQshya Initiative has at its core a facility-level certification process, which assesses facilities on quality standards within the National Quality Assurance Standards (NQAS) framework.[6] Though it is comprehensive, the process is still being implemented, so the effects are only partially observable. State and district level context may impact implementation of the LaQshya Initiative´s audits and objectives. There is agreement from multiple studies that availability of inputs – equipment, drugs, human resources – do not automatically lead to improved maternal health outcomes, particularly if there is no regular process or accountability, or if there is a lack of view to patient care.[7,8]

In regards to Gujarat, although there are attempts to prioritize maternal health at the state-level, evidence about the performance of LaQshya-certified or aligned facilities' performance regarding their actual services is limited. Evaluating the relationship between inputs and service provision can help to identify constraints and manage resources. An input to output analysis aligned to the LaQshya framework is a practical way to establish whether increased inputs, such as trained staff, minimum supplies, infection prevention, and clinical practices, are resulting in desired lived outcomes, such as institutional births, readiness to do caesarean sections and starting breastfeeding in the 'Golden Hour'.

This study aims to address this evidence gap to elucidate input-output performance across selected secondary and community health facilities in Rajkot district, Western Gujarat. This study examines the association of inputs as they are seized by LaQshya - controlled inputs and maternal service outputs, which will facilitate decision-makers and program implementers to mid-course corrections and consolidate health ahead in high quantitative burden contexts.

Methods:

The study was a cross-sectional facility based observational study conducted in a public health context in the Rajkot district of Western Gujarat, India from March to June 2022. The study sought to ascertain the association between facility-level input preparedness and maternal care service outputs under LaQshya (quality improvement initiative for the labour room), a national program established by the Ministry of Health and Family Welfare, the purpose of which is to improve standards of intrapartum care and preventable maternal and neonatal morbidity and mortality.

A total eight health facilities were purposively selected through stratification of all levels of obstetric care (primary and secondary). Since there were only five government Sub-District Hospitals (SDHs) in the district we wanted to make sure we had an accurate representation of secondary care delivery points and therefore included the five SDHs. For the purpose of capturing primary-level institutional delivery, we randomly selected three of the six LaQshya-notified

CHCs (Community Health Centres). All the selected facilities were labelled as SDH-A,SDH-B so one for identification. Such selections allowed for evidence to include variation with regard to size, geographic spread, and available resources.

The data was captured using a pre-tested, semi-structured checklist adapted from the Government of India standard LaQshya Facility Assessment Tool. This tool addressed four broad categories: (i) infrastructure adequacy (availability of a functioning labour room, electricity, water supply, and clean toilets); (ii) essential equipment (delivery table, radiant warmer, oxygen, suction); (iii) availability of life-saving drugs (oxytocin, magnesium sulphate, antibiotic); and (iv) human resources (number and training status of medical officers, nurses and specialists). Each item within each domain were scored as a percentage - available items to the expected items. Thereafter, the composite input score was calculated by determining the mean percentage score of each domain per facility.

Within the identified study sites, output performance indicators were collected from the delivery register, referral log, and monthly report for the same time period. Some of the key output variables have included the total number of institutional deliveries, proportion of caesarean section, proportion of deliveries occurring at night (proxy for 24-hour facility availability), incidence of postpartum haemorrhage (PPH), early initiation of breastfeeding (within the hour), patient satisfaction (using existing exit feedback tools), and number of cases with referral delays due to lack of services.

Data on all indicators were collected using direct observation, interviewing the staff, and reviewing records by trained field investigators. Data were then entered into Microsoft Excel for digitization and subsequently analysed using Jamovi version 2.4.6. Descriptive statistics were employed to describe inputs and outputs at the facility level.

Input readiness at each facility was assessed across four domains: basic infrastructure, essential equipment, medicine availability, and human resources. Each domain was scored as the percentage of required items available. The Composite Input Score was computed as the average of these four domain percentages.

To assess the strength and direction of association between the composite input scores and each of the output indicators, Spearman “LOs rank correlation (Spearman “LOs ñ) was performed. The Spearman correlation could be carried out based on the small sample size and lack of normal distribution among many denominators. Correlation coefficients were considered based on acceptable thresholds, and a p-value less than 0.05 was regarded as indicative of statistical significance.

The study protocol was lodged with, and approved by, the Institutional Ethic Committee of the Indian Institute of Public Health, Gandhinagar (IIPH). Administrative permission for data collection and facility visits was obtained from the Additional Director (Family Welfare), Government of Gujarat, and the Chief District Health Officer, Rajkot. To ensure confidentiality and respect for ethical norms, identifiers at the patient-level were never considered in the analysis of data, only aggregate data at the facility level were included.

Results:

The input analysis of evaluated health facilities in Rajkot district exhibited significant variability in preparation by LaQshya criteria. Among the secondary level hospitals, SDH-B and SDH-A had composite input scores of 90% and 87.25%, respectively. SDH-B and SDH-A scored uniformly high across the domains of infrastructure, equipment, availability of medicines and human resources. These hospitals were well equipped to provide quality intrapartum care and achieve LaQshya certification. Conversely, moderately scoring facilities like SDH-E, CHC-C and SDH-C exhibited imbalanced readiness: some aspects around equipment and human resources displayed unbalanced readiness indicators where one or multiple aspects did not meet criteria. While most centres appeared to have sufficient availability of medicines, weaknesses in the deployment of staff and essential equipment limited their service delivery capacity. (Table.1)

Table 1: Facility wise input and composite input score

Facility	Basic Infra Structure (%)	Equipment (%)	Medicine (%)	Human Resource (%)	Composite Input (%)
CHC-A	62	36	82	25	51.25
SDH-A	92	91	91	75	87.25
SDH-B	85	100	100	75	90.00
CHC-B	69	36	91	38	58.50
CHC-C	69	64	82	50	66.25
SDH-C	69	64	91	25	62.25
SDH-D	54	55	82	63	63.50
SDH-E	77	45	100	75	74.25

Table 2: Facility wise deliveries and output performance

Facility	Total Deliveries	C-Sections/ Month	Night Deliveries	Stillbirths	PPH Cases	Breastfeeding <1 hr (%)
CHC-A	9	0	4	1	0	40%
SDH-A	149	33	41	0	1	92%
SDH-B	110	14	38	1	2	88%
CHC-B	38	0	17	0	0	60%
CHC-C	54	0	23	1	0	65%
SDH-C	54	0	23	0	1	75%
SDH-D	100	2	48	1	2	78%
SDH-E	80	21	23	0	1	85%

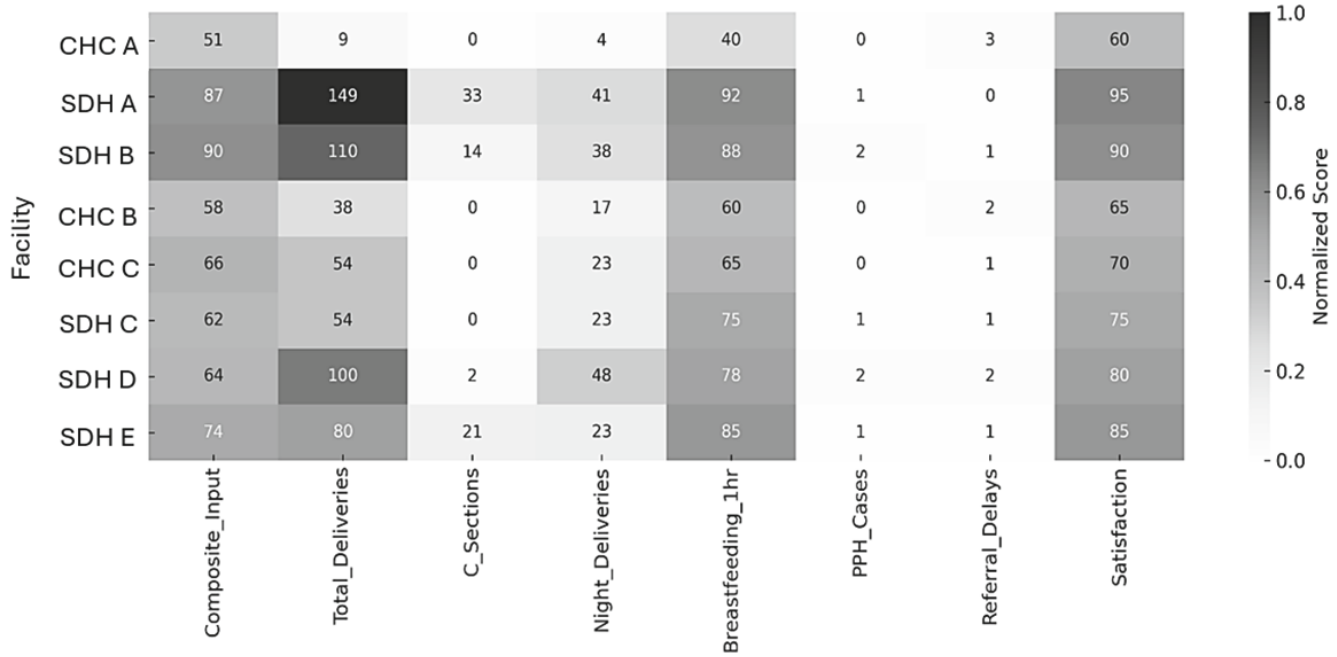
Table 3: Additional inputs assessed in terms of staff training, audits, satisfaction level and referral delays

Facility	%Staff LaQshya Trained	No. of Audits (Last 3 months)	Patient Satisfaction (%)	Referral Delay Cases
CHC-A	40%	0	60%	3
SDH-A	90%	3	95%	0
SDH-B	85%	2	90%	1
CHC-B	50%	1	65%	2
CHC-C	60%	1	70%	1
SDH-C	70%	2	75%	1
SDH-D	60%	2	80%	2
SDH-E	80%	2	85%	1

Table 4: Spearman's Rank Correlation between Composite Input Score and Output Indicators

Output Indicator	Spearman's rho (ρ)	p-value
Total Deliveries	0.886	0.005
Breastfeeding Initiation <1hr (%)	0.790	0.012
PPH Cases	-0.710	0.033
Stillbirths	-0.520	0.085
Patient Satisfaction (%)	0.815	0.009
Referral Delays	-0.670	0.042

Figure 1: Facility-wise Cp,[psote Input Readiness and Maternal Service Output Indicators under LaQshya



The two facilities that performed very low CHC-A (51.25%) and CHC-B (58.50%) had clear deficiencies related their human resource availability and the readiness of their equipment systems. The facility indicated 25% human resource availability that significantly limited the maternal care services that were provided even though the medical infrastructure and drug supply were relatively good. The authorities emphasized that we need to measure and have consistencies in the input quality across all independent variables a necessary condition for turning around maternal welfare service delivery. (Table 1)

The report of the delivery indictors from the selected centres showed obvious differences in delivery volumes and maternal-newborn outcomes. As would be expected, the secondary-level hospitals SDH-A, SDH-B, and SDH-D had the largest caseload, and SDH-A had by far the largest volume of monthly deliveries (149) and caesarean section volume (33 per month), closely followed by SDH-B and SDH-E. These facilities are also likely to have 24-hour services available, reflecting in their higher volume of deliveries at night. Interestingly, SDH-A had achieved a 92 percent rate of early initiation of breastfeeding within one hour of birth, a quality indicator in LaQshya, and an indicator of good postnatal care. In general, however, the lower-level facilities (for example, CHC-A and CHC-B) had very low delivery volumes (9 and 38, with no surgical capability -low capacity for providing new-born care) that restricted their service orientation.(Table 2)

In total, PPH (post-partum Haemorrhage) cases were low across almost all facilities but nevertheless, their existence, though few, suggested and reinforced the need for readiness; one should be prepared and not need it, then not be prepared and needed it. SDH-B and SDH-D had over one reported case of PPH corresponding to their overall larger caseload. The initiation of early breastfeeding ranged from 40 percent (for CHC-A) to 88-92 percent (the better performing SDHs) which suggested that in the early breastfeeding example, quality components of maternal new-born care were directly linked to the quality of composite input. Generally, the CHCs lagged in service volume and all other outcome measurements for maternal-newborn care based on the performance measures in this study. As previously noted, CHCs are at risk of falling behind if they offer a composite input score that is low enough such that they struggle to reach the maternal-care

outcomes outlined by LaQshya previously. Summing all dimensions of the assessment, facilities aligned with composite inputs and better staffed than other facilities not only had higher volumes but also had better indicators of quality care. (Table 2)

Examining the more detailed input indicators relating to LaQshya training coverage, clinical audits, patient satisfaction and referrals gaps provided further understanding of facility level quality systems (what conditions, what staff trained, what extent audits practice undertaken, etc.). For example, the SDH-A, SDH-B, and SDH-E Level hospitals reported high proportions of the staff that had received LaQshya training (90%, 85%, and 80% respectively), the most audits performed in the last three months, and higher patient satisfaction scores (90-95%) with limited gaps for referrals reported. Overall, the indicator's trend suggested that internal quality systems were functioning, but, CHC-A reported the lowest coverage of staff training (40%), had reported no audits, a patient satisfaction score of only 60%, and three referrals reported - reflecting low capacity and responsiveness and consequently concerning. (Table 3)

Facilities categorized as moderate performers, including CHC-C, SDH-C, SDH-D - had reported incomplete staff training (60-70%), moderate audit processes (1-2 audits completed in last 3 months), and moderate patient satisfaction (70-80%). These facilities even reported only sometimes being constrained by issues with referrals. The concerns with referrals by both CHCs and some SDHs suggested there could also be additional constraining factors/ barriers relating to readiness for emergency obstetrics or gaps in transport logistics. Overall, those facilities reporting higher levels of coverage, staff training, and systematic audit processes, in turn, reported most likely to be provide patient cantered care and appropriate and timely response to complications. This finding supports LaQshya's dual aim of supporting quality of care and respectful care during the provision of maternity care. Moreover, the findings indicated that sustained improved quality of care during labour and delivery will necessitate ongoing service staff capacity-building and formalized feedback processes. (Table 3)

The correlation analysis between composite input scores and key output measures revealed statistically significant and meaningful associations, providing additional evidence of the relationship between inputs preparedness and quality of service delivery. There was a strong positive correlation between composite input scores, and total deliveries was 0.886 ($p = 0.005$), suggesting that well-equipped and well-staffed facilities were more likely to attract and manage above-average levels of deliveries. However, we also found that early breast-feeding within one hour of birth showed moderate to strong positive correlation (0.790, $p = 0.012$), indicating that facilities with better inputs were more likely to follow aspiration newborn care practices. We also uncovered a strong positive association between patient satisfaction and input scores (0.815, $p = 0.009$), which may suggest that we can have reasonable expectation that those facilities that could demonstrate systemic readiness and capacity of personnel are more likely to provide respectful, quality-based care.(Table 4)

On the contrary, the poor maternal and system-related outcomes evaluated in the study (PPH and delays in referral) showed clear evidence of strong negative correlations with the input scores. Facilities with greater input preparedness reported fewer PPHs ($\rho = -0.710$, $p = 0.033$), and significantly fewer delays in referrals ($\rho = -0.670$, $p = 0.042$). This means that the presence of an acceptable structure, trained staff, and effectively functioning emergency structures, each of which supports the potential for overcoming complications, matters. Lastly, while the association between input score and stillbirths was negative ($\rho=-0.520$) the strength was falling short of being statistically significant ($p=0.085$); this could have been due to the smaller number of stillbirth events observed or un-measured confounders. Our thoughts are that these results provide support for our initial hypothesis that input aligned LaQshya-affiliated facilities were associated with improved maternal or newborn health service outputs as a function of both quantity and quality.(Table 4)

The heat map displayed the aforementioned variations in readiness for composite inputs and maternal service outputs by facilities under LaQshya, and

program implementation level. Facilities performing in the upper quartile such as SDH-A, SDH-B, and SDH-E were displaying darker colours on the heatmap across much of the input and output parameters indicating they had excellent input readiness and exhibited high volumes of deliveries, caesarean section performance, early initiation of breastfeeding, patient satisfaction and number of referral delays. Facilities that were performing in the lowest quartile such as CHC-A and CHC-B were displaying lighter colours across most of the indicators suggesting the facilities showed poor input readiness, high volumes of caesarean sections, or any of the other negative outcome indicators including limited surgical capacity, and poor-quality indicators or measures. When we examine the facilities that were performing in the mid-range performance: CHC-C, SDH-C, and SDH-D, we see there was variable performance, with mid-range scores falling in inputs and variable outputs. The heat map indicated the aforementioned positive relationship between better levels of input readiness and better maternal service outcomes. Therefore, there was implication that intentional capacity enhancement might be needed for that. (Fig.1)

Discussion:

This study from Rajkot district, Gujarat shows clear evidence that facilities with stronger input readiness under the LaQshya initiative achieve better maternal care outcomes. Higher-scoring facilities—such as SDH-A, SDH-B, and SDH-E—had well-developed infrastructure and processes, and consistently showed better results, including higher delivery and C-section numbers, timely breastfeeding initiation, minimal PPH, greater patient satisfaction, and no referral delays. In contrast, lower-scoring facilities like CHC-A and CHC-B showed weaker readiness and unequal service performance.

A correlation analysis was conducted and corroborated the presumed relationships. Scores of inputs had strong positive correlation with total deliveries ($\rho = 0.886$, $p = 0.005$) and patient satisfaction ($\rho = 0.815$, $p = 0.009$). The scores of inputs affirm previous studies that determined that structural quality feels have a direct effect on service uptake and perceptions of quality of care.[9-11] The scores of inputs also resulted in a statistically significant correlation moderate to strong correlation with timely breast feeding initiation ($\rho = 0.790$, $p = 0.012$), confirming the WHO that immediate postpartum care relies heavily on the readiness of the facility and trained human resource.[12]

The strong negative correlations for PPH cases ($\rho = -0.710$) and delayed or absent referrals ($\rho = -0.670$) suggest that good infrastructure and adequately trained staff significantly improve a facility's readiness.[4] When these structural elements are in place, obstetric emergencies can be managed more promptly, leading to faster clinical decisions and reduced delays in care.

Using a heat map visualization allowed for an insightful and nuanced interpretation of the data and we were able to see the clear continuities in respect to the high-performing and low-performing facilities. As mentioned above, SDH-A had full staff uptake, valid audit procedures, and nearly full LaQshya training uptake (90%) so it was not particularly surprising that this was the facility that had the greatest functional consistency with national labour room QI standards as suggested across the data in panels A and B. This was not dissimilar to what was seen in Tamil Nadu and Maharashtra[10-12], who also noted that paying attention to the implementation of LaQshya standards was broadly correlated with a systems improvement in maternal care particularly in sub-district level and district hospitals.

Those facilities that demonstrated low percentages of LaQshya-trained staff (e.g., CHC-A), and had no audit platform in place, also had less favourable experience and quantitative maternal experience, providing support for the notion that any QI framework will only be implemented successfully when the emphasis is on integrating and maintaining accountability; not on only providing inputs.[5] Although the initiative articulated through documents required clinical audits and illustrative practices and procedures pertaining to respectful maternity care, the frequency of audits and patient feedback systems across facilities varied. The facilities those have conducted (e.g. SDH-A, SDH-B, and SDH E) audits regularly, also had the positive

maternal outcomes and patient satisfaction, suggesting that continuous quality monitoring, and corrective feedback loops are important in planning and implementing.[5,13] Previous evidence from Uttar Pradesh and Bihar provide evidence of this; maternal care indicators improves systematically once audits, supervisory visits and corrective feedback loops are made standard.[14]

The weak correlation ($\rho = -0.520$, $p = 0.085$) inputs scores to stillbirths deserve some consideration. While stillbirths are comparatively rare in this data set, they may often occur with upstream features such as quality of antenatal care, timeliness of referral, and maternal co-morbidities, which may not be adequately amenable through LaQshya interventions.[15] However, the continued observation of stillbirths in some facilities shown to perform well, demonstrates the feasibility of integrating antenatal surveillance and referral risk mapping as an additional layer to the planned improvement guidance that LaQshya developed for labour rooms.

The study has generated practical supply chain implications, but there are also limitations. First, the inclusion of eight facilities limits generalizability. Second, since this study is cross-sectional, it could not account for seasonality or longitudinal progress. Third, while we did measure input and output indicators of LaQshya quantitatively, we did not measure provider behaviour, the quality of communication or the patient perspective, which would be central to the idea of Respectful Maternity Care (RMC).[16,17] Finally, simply basing referral delay measurement on facility tracking, rather than timing on referring patients may underplay delay.

In the future, research should be undertaken with a mixed methodology to evaluate the experiences of patients and providers, consider comparisons in the private sector, and assess the impact of digital health tools and tele-audits under the LaQshya program. It is also important to develop real-time dashboards and ensure equitable implementation (i.e., in the case of the CHC) and incorporate proactive strategies for sustainable behavioural change into all LaQshya trainings. Finally, LaQshya's ability to succeed will ultimately depend on how synergistically the components of infrastructure, clinical competence, respectful care, and accountability can be combined, a model that is gaining traction in the global maternity and newborn health (MNH) discussion.[18,19]

Conclusion:

The input–output analysis of LaQshya implementation in Rajkot district shows that strong infrastructure, adequate equipment, skilled staff, and reliable medicine supply are key drivers of improved maternal health outcomes. Facilities with better input readiness demonstrated higher delivery loads, timely referrals, early initiation of breastfeeding, reduced postpartum haemorrhage, and better patient satisfaction. Overall, the LaQshya framework has the potential to significantly strengthen labour room care, provided that resources are equitably allocated, performance is regularly monitored, and implementation remains consistent across all facilities.

Recommendations:

Strengthen Facility Based Infrastructure and Supplies: Health facilities with low composite input scores should be targeted for infrastructure strengthening, provision of essential obstetric equipment and continued supply of drugs especially at CHC levels. Ensure adequate Skilled Human Resources: Deploy qualified HR with access to obstetrical specialists proportionally based on workload. LaQshya certified training should scale up to 100% staff coverage across all health facilities, especially where HR coverage is low. Audit And Feedback Loop Routine Institutionalization: Scheduled clinical audits and patient satisfaction surveys should be mandatory, to monitor performance and quality in real time. Facilities that have not had an audit in the last 24 months should be identified for quality assurance for potential review as soon as possible. Ensure Equitable Distribution of Cesarean Capacity: In some CHCs and even some SDHs cesarean services were not available. Regional health planners will need to assess and 'to redistribute surgical capacity sourced centrally for normal and rare surgical

items with a view to reducing inappropriate referrals and avoid referral delays. Addressing Referral System Concerns: Facilities with significant referral delays require support with transport linkages, emergency protocols and 24 × 7 specialist services. Maintaining Certification and Quality Standards: laQshya certification of hospitals should not be a "one-off" activity but should be a continuous process through renewal and/or reassessment of performance (ideally every 3 years; not the 3-5 years suggested in the guidelines) and by relating it to the on-going maternal health program (including PMSMA and JSY).

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Conflict of Interest: Nil

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References:

1. National Family Health Survey (NFHS-5), India, 2019-20: International Institute for Population Sciences (IIPS) and ICF. Mumbai: IIPS; 2020.
2. UNICEF. Every Newborn: An Action Plan to End Preventable Deaths. Geneva: World Health Organization; 2014.
3. Bhutta ZA, Das JK, Bahl R, Lawn JE, Salam RA, Paul VK, et al. Can available interventions end preventable deaths in mothers, newborn babies, and stillbirths, and at what cost? Lancet. 2014;384(9940):347–70.
4. Ministry of Health and Family Welfare. LaQshya – Labour Room Quality Improvement Initiative: Operational Guidelines. Government of India; 2017.
5. Srivastava A, Avan BI, Rajbangshi P, Bhattacharyya S. Determinants of women's satisfaction with maternal health care: a review of literature from developing countries. BMC Pregnancy Childbirth. 2015;15:97.
6. National Health Systems Resource Centre. Operational Guidelines for Quality Assurance in Public Health Facilities. New Delhi: MoHFW; 2013.
7. Sharma G, Mathur S, Singh S. Understanding Implementation Challenges of LaQshya in High Delivery Load Facilities: Insights from Madhya Pradesh. Indian J Public Health. 2021;65(2):124–30.
8. Agarwal S, Sripad P, Johnson C, Kirk K, Bellows B, Ana J, et al. A conceptual framework for measuring community health workforce performance within primary health care systems. Hum Resour Health. 2019;17(1):86.
9. Donabedian A. The quality of care. How can it be assessed? JAMA. 1988;260(12):1743–8.
10. Raj A, Dey A, Boyce S, Seth A, Bora S, Chandurkar D, et al. Associations between Quality of Facility-Based Maternity and Newborn Care and Maternal and Newborn Health Outcomes in Uttar Pradesh, India. PLoS One. 2017 Oct 6;12(10):e0184787.
11. Kruk ME, Gage AD, Arsenault C, Jordan K, Leslie HH, Roder-DeWan S, et al. High-quality health systems in the Sustainable Development Goals era: time for a revolution. Lancet Glob Health. 2018 Nov;6(11):e1196–252.
12. World Health Organization. Standards for improving quality of maternal and newborn care in health facilities. Geneva: WHO; 2016.
13. Sharma G, Powell-Jackson T, Haider S, Ranganathan M. Quality of routine essential care during childbirth: clinical observations of uncomplicated births in Uttar Pradesh, India. Bull World Health Organ. 2017 Jul 1;95(7):419–29.
14. Miller S, Abalos E, Chamillard M, Ciapponi A, Colaci D, Comandé D, et al. Beyond too little, too late and too much, too soon: a pathway towards evidence-based, respectful maternity care worldwide. Lancet. 2016 Nov 5;388(10056):2176–92.
15. Chou D, Daelmans B, Jolivet RR, Kinney M, Say L. Ending preventable maternal and newborn mortality and stillbirths. BMJ. 2015 Sep 14;351:h4255.
16. Bowser D, Hill K. Exploring Evidence for Disrespect and Abuse in Facility-Based Childbirth. USAID/TRAction Project; 2010.
17. White Ribbon Alliance. Respectful Maternity Care: The Universal Rights of Childbearing Women. Washington DC: WRA; 2011.
18. Tunçalp Ö, Were WM, MacLennan C, Oladapo OT, Gülmezoglu AM, Bahl R, et al. Quality of care for pregnant women and newborns—the WHO vision. BJOG. 2015 Jul;122(8):1045–9.
19. Renfrew MJ, McFadden A, Bastos MH, Campbell J, Channon AA, Cheung NF, et al. Midwifery and quality care: findings from a new evidence-informed framework for maternal and newborn care. Lancet. 2014 Sep 20;384(9948):1129–45.